

**PLASMA IMMERSION ION IMPLANTATION APPARATUS INCLUDING A
PLASMA SOURCE HAVING LOW DISSOCIATION AND LOW MINIMUM PLASMA
VOLTAGE**

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ABSTRACT

A method for ion planting a species into a surface layer of
a workpiece in a chamber, the method includes placing the
workpiece in a processing zone of the chamber bounded by a
10 chamber side wall and a chamber ceiling facing said
workpiece and between a pair of ports of the chamber near
generally opposite sides to the processing zone and
connected together by a conduit external of the chamber.
The method further includes introducing into the chamber a
15 process gas comprising the species to be implanted, and
further generating from the process gas a plasma current and
causing the plasma current to oscillate in a circulatory
reentrant path comprising the conduit and the processing
zone.

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